

CLAIM AMENDMENTS

1-9 (Cancelled)

10. (Currently Amended) An internal combustion engine having a crankshaft and a valve mechanism, wherein the valve mechanism comprises

a gas exchange poppet valve,

a camshaft rotatable in synchronism with the engine crankshaft and having a cam for operating the valve,

a valve actuator acting on the poppet valve to open and close the valve, the valve actuator having a part-cylindrical contact surface,

a pivot shaft that is moveable relative to the camshaft along a predetermined path in response to rotation of the pivot shaft about its own axis, and

an intermediate rocker mounted on the pivot shaft and having a follower acted upon by the cam and a contoured surface that acts on the part-cylindrical contact surface of the valve actuator to open and close the valve in synchronism with the rotation of the cam,

wherein movement of the pivot shaft along the predetermined path causes movement of intermediate rocker, and movement of the intermediate rocker in turn causes the valve lift to vary, and said predetermined path is such that, while the cam follower is on the base circle of the cam, the valve actuator remains stationary and a substantially constant clearance is maintained between the contoured surface of the intermediate rocker and the valve actuator during displacement of the pivot shaft along the path.

11. (Previously Presented) The engine of claim 10, wherein the pivot shaft is located on the intermediate rocker between the cam follower and the contoured surface.

12. (Currently Amended) The engine of claim 10, wherein the valve actuator is constructed as a valve actuating rocker pivoted at one end, acting on the valve at its other and having ~~between its ends a~~ said part-cylindrical contact surface ~~or a roller follower acted upon by the contoured surface of the intermediate rocker between its ends.~~

13. (Previously Presented) The engine of claim 12, wherein the pivot at the said one end of the valve actuating rocker comprises a hydraulic lash adjuster.

14. (Currently Amended) ~~The engine of claim 12,~~ An internal combustion engine having a crankshaft and a valve mechanism, wherein the valve mechanism comprises:

a gas exchange poppet valve,

a camshaft rotatable in synchronism with the engine crankshaft and having a cam for operating the valve,

a valve actuator acting on the poppet valve to open and close the valve, the valve actuator being constructed as a valve actuating rocker pivoted at one end, acting on the valve at its other end and having between its ends a part-cylindrical contact surface or a roller follower acted upon by the contoured surface of the intermediate rocker,

a pivot shaft that is moveable relative to the camshaft along a predetermined path in response to rotation of the pivot shaft about its own axis, and

an intermediate rocker mounted on the pivot shaft and having a follower acted upon by the cam and a contoured surface that acts on the valve actuator to open and close the valve in synchronism with the rotation of the cam,

wherein movement of the pivot shaft along the predetermined path causes movement of intermediate rocker, and movement of the intermediate rocker in turn causes the valve lift to vary, and said predetermined path is such that, while the cam follower is on the base circle of the cam, the valve actuator remains stationary and a substantially constant clearance is maintained between the contoured surface of the intermediate rocker and the valve actuator during displacement of the pivot shaft along the path, and

wherein the pivot shaft is journaled in a link that constrains the pivot shaft of the intermediate rocker to move along an arc centered on the axis of the roller or cylindrical contact surface of the valve actuating rocker.

15. (Previously Presented) The engine of claim 14, wherein the pivot shaft passes with clearance through a bore in an eccentric sleeve rotatably supported in a stationary bearing block of the engine.

16. (Previously Presented) The engine of claim 15, wherein the eccentric sleeve is coupled to the shaft by means of a pin which is free to slide relative to at least one of the sleeve and the shaft.

17. (Currently Amended) The engine of ~~claim 9~~ claim 10, wherein a phase change mechanism is provided between the engine crankshaft and the camshaft.

18. (Currently Amended) The engine of ~~claim 9~~ claim 10, having two valve mechanisms controlling the flow of gas into or out of each engine cylinder, wherein the cam profiles and/or the contoured surfaces of the intermediate rockers actuating the two valves of each cylinder have a different geometry from one another, such that the valve lift characteristics of the two valves differ from one another as the valve lift is reduced.

19. (New) The engine of claim 10, wherein said part-cylindrical contact surface is a surface of a roller follower.